

Botanists meet in Madrid at the XX International Botanical Congress

By Gary A. Krupnick

Department of Botany staff members and affiliates joined colleagues from near and far at the XX International Botanical Congress (IBC) in Madrid, Spain, from July 21-27, 2024.

Immediately preceding the main program of the XX IBC, the Nomenclature Section of the Congress took place at the central campus of the Consejo Superior de Investigaciones Científicas (CSIC) in Madrid from July 15-19. This Section was presented by the Congress's Bureau of Nomenclature as prescribed by the *International Code of Nomenclature for algae, fungi, and plants* (ICN). Sandra Knapp (Natural History Museum, London), president of the Bureau of Nomenclature, chaired the session, with expertise and guidance given by the Rapporteur-général, Nicholas Turland (Botanischer Garten und Botanisches Museum Berlin), and the Vice-rapporteur, **John Wiersema** (Smithsonian Research Associate). The Nomenclature Section deliberated 433 proposals to amend the ICN. Others attending from the Botany Department were **Laurence Dorr**, **Rose Gullledge**, **Paul Peterson**, **Eric Schuettpeitz**, **Robert Soreng**, **Kenneth Wurdack**, and Smithsonian Research Associate **Morgan Gostel**. Important topics that were discussed in-

cluded proposals on culturally sensitive issues as well as the removal of a significant set of names based on racially offensive terms, and a clear mechanism for the voluntary registration of names and types of algae and plants.

The Congress opened on 21 July with registration and a reception at the IFEMA (Institución Ferial de Madrid) convention center, attended by thousands of participants. The program officially began with an opening talk by Knapp

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**The Department of Botany sent
17 participants to attend the XX
International Botanical Congress
where they presented 27 scientific
talks and 16 posters.**

XX IBC

Continued from page 1

followed by a traditional Spanish dance performance. The Congress focused on the newest developments in the botanical sciences worldwide and included plenary talks, general lectures, symposia, poster sessions, and workshops. All aspects of basic and applied botanical research were included. More than 3,000 participants attended from all around the globe, making the XX IBC a truly international event.

Departmental members and research associates who attended and presented talks, posters, and workshops during the scientific sessions were **Marc Appelhans**, **Alberto Coello**, **Laurence Dorr**, **Morgan Gostel**, **Rose Gullledge**, **Amanda Grusz**, **Richie Hodel**, **Gary Krupnick**, **Paul Peterson**, **Vijay Raman**, **Eric Schuettelpelz**, **Robert Soreng**, **Alicia Talavera**, **Jun Wen**, and **Kenneth Wurdack**. Co-authors of talks and posters who could not attend the meeting were **Pedro Acevedo**, **Gabriel Johnson**, **John Kress**, **Sylvia Orli**, **Kostya**



Botanists participate in the Nomenclature Section of the XX International Botanical Congress where they deliberated on proposals to amend the International Code of Nomenclature for algae, fungi, and plants. (photo by Eric Schuettelpelz)

Romaschenko, **Luke Sparreo**, **Gregory Stull**, and **Elizabeth Zimmer**.

Small group meetings and workshops were organized by members and affiliates of the Department, including the International Compositae Alliance (TICA; **Morgan Gostel**) and the International Association of Plant Taxonomy (IAPT) business meeting (**Laurence Dorr**, **Sally Eichorn**, **Warren Wagner**, and **Morgan Gostel**).

Previous IBCs that *The Plant Press* had highlighted include XVI in St. Louis (1999), XVII in Vienna (2005), XVIII in Melbourne (2011), and XIX in Shenzhen (2017). The XXI International Botanical Congress is scheduled to take place in Cape Town, South Africa, on 21-28 July 2029.

Contributed Presentations

Ang, L.P., S. Tomasello, **J. Wen**, and **M.S. Appelhans**. Hybrid Capture resolves the phylogeny of the pantropically distributed *Zanthoxylum* (Rutaceae) and reveals an Old World origin.

Barberá, P. A. Asase, I.T. Borokini, A. Colwell, C.C. Davis, N.M. Franz, P. Fritsch, E. Gilbert, B.L. Isaac, R. Johnson, B.A. Kaplan, R.Y. Kartzinell, M.L. Kawasaki, J. Kennedy, J. Kluse, E.M. Kramer, L. Lagomarsino, T. Livshultz, P.P. Lowry, M. McMahon, B.D. Mishler, T.I. Mzumara, M. Nazaire, K.C. Nixon, N.E. Obiang, **S. Orli**, K. Pearson, A.T. Peterson, D. Potter, M.J. Power, T.F. Rehman, H. Schmidt, D.R.

Simmons, M. Schmult, **E. Schuettelpelz**, C.R. Smith, N. Snow, P.W. Sweeney, N. Tarnowsky, J.K. Teisher, G.D. Weiblen, T.J.S. Whitfield, J. Wicczorek, and P. Zermoglio. Digitization and enrichment of U.S. herbarium data from tropical Africa to enable urgent quantitative conservation assessments.

Bonifacino, M., J.C. Semple, **M.R. Gostel**, N.G. Bergh, B. Loeuille, P. de L. Ferreira, A.N. Sennikov, N. Roque, G. Heiden, G. Nesom, and L. Katinas. The Global Compositae Database: challenges and opportunities.

Cardinal-McTeague, W., **K. Wurdack**, and L. Gillespie. A revised generic classification of Tragiinae including the subdivision of *Tragia* (Euphorbiaceae tribe Plukenetieae).

Chen, Z.D., D.X. Peng, H.H. Hu, L.M. Lu, R. Barrett, and **J. Wen**. Biogeographic history and ecological processes of the Asia-Australasia floristic exchange: history, progress and prospect.

Coello, A.J., I. Ramos-Gutiérrez, R. Molina-Venegas, A. Buira, M. Mairal, P. Vargas, R.A. Scherson, B.D. Mishler, J.C.M. Saiz, and M. Fernández-Mazuecos. Spatial phylogenetics in the western Mediterranean Region: phylogenetic diversity and endemism of the Iberian angiosperm flora.

Colli-Silva, M., O.A. Pérez-Escobar, C.D.M. Ferreira, M.T.R. Costa, S. Gerace, T. Silva-Coutinho, V.N. Yoshikawa, H. Antonio-Domingues, R. Hernández-Gutiérrez,



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On the cover: *Cistus albidus* (Cistaceae) is a Mediterranean shrub native to the Iberian Peninsula. (photo by Alberto Coello)



Jun Wen taking questions after her talk on biogeography at the XX International Botanical Congress in Madrid. (photo by Vijay Raman)

rez, M. Cheek, M.W. Chase, M.F. Fay, W.S. Alverson, M. Bovini, **L.J. Dorr**, W.J. Baker, and A. Antonelli. Towards an updated classification of Malvales and Malvaceae: insights from phylogenomics and morphology.

Dalastra, C.H., P.W. Fritsch, **M.R. Gastel**, and G. Heiden. To the mountains and beyond: diversity and systematics of *Agarista* (Ericaceae) in the Americas.

Duan, L., H.F. Chen, A.J. Harris, and **J. Wen**. Terrestrial plant evolution driven by the global cooling during the Eocene-Oligocene transition-examples from three tribes of Leguminosae.

Gallejo-Narbón, A., **J. Wen**, L. Valente, **G. Johnson**, M. Cocade-la-Iglesia, N.G. Medina, M. Fernández-Mazuecos, and V. Valcárcel. Climatic niche and functional shifts after Neotropics colonization drive diversification in the amphi-pacific genus *Dendropanax*.

Gastel, M.R., M.A. Andriamanohera, H. Antonio-Domingues, A.R.G. Simões, I. Larridon, and B. Loeuille. Exorcising the demons: subtribal revision of the ironweed tribe (Vernonieae, Compositae) in the Eastern Hemisphere.

Grusz, A.L., and M.D. Windham. Evaluat-

ing a drought-driven hypothesis for the origin of obligate apomixis in ferns.

Herrera, F., M.R. Carvalho, **G.W. Stull**, C. Jaramillo, and S.R. Manchester. Cenozoic seeds of Vitaceae reveal a deep history of extinction and dispersal in the Neotropics.

Hodel, R., **A. Talavera**, W. Weaver, A. White, M. Trizna, R. Dikow, **L. Zimmer**, Z.L. Nie, and **J. Wen**. Machine learning analyses of herbarium specimens identify morphological features characterizing tropical to temperate transitions.

Jin, Z.T., **R.G.J. Hodel**, D.K. Ma, H. Wang, G.N. Liu, C. Ren, B.J. Ge, Q. Fan, S.H. Jin, C. Xu, J. Wu, and B.B. Liu. Nightmare or delight: taxonomic circumscription meets reticulate evolution in the phylogenomic era.

Lu, L., Y. You, J. Yu, Z. Nie, R.L. Barrett, **J. Wen**, and Z. Chen. The origin, diversification, and adaptation of the grape family Vitaceae.

Ma, Z., X. Xu, W. Peng, H. Xiao, Z. Liu, W. Liu, F. Zhang, T. Zhang, Z. Chen, Y. Luo, Y. Peng, **J. Wen**, B.S. Gaut, and Y. Zhou. Genomic insights into adaptive evolution and climate change vulnerability of the grape genus (*Vitis* L.).

Nie, Z.L., Y. Meng, M.H. Zhang, **L. Sparre**, **A. Talavera**, and **J. Wen**. A diversification-transition model between tropical and temperate biomes explains the Northern Hemisphere biodiversity.

Nitta, J.H., C.J. Rothfels, H. Schneider, and **E. Schuettpelz**. Pteridophyte Phylogeny Group II and beyond: an updated, community-driven, and open classification for ferns and lycophytes.

Onyenedum, J.G., I.L.C. Neto, C. Su, and **P. Acevedo-Rodríguez**. Evolution of development of vascular variants in a large lineage of neotropical woody vines: Paullinieae (Sapindaceae).

Quintanar, A., **R.J. Soreng**, **P.M. Peterson**, **K. Romaschenko**, C. Aedo, and P. Barberá. Advances on a new classification for koele-

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Alicia Talavera, post-doctoral fellow, speaks about North American grapes during her presentation at the XX International Botanical Congress in Madrid. (photo by Alberto Coello)

rioid grasses based on molecular studies and morphology (Poaceae: Pooideae: Aveninae).

Soreng, R.J., T.J. Gallaher, P.M. Peterson, K. Romaschenko, F.O. Zuloaga, D.Z. Li, L.G. Clark, C.D. Tyrrell, C.A.D. Welker, E.A. Kellogg, and J.K. Teisher. Grasses through space and time: An overview of the biogeographical and macroevolutionary history of Poaceae.

Talavera, A., R. Hodel, E. Zimmer, and J. Wen. Unraveling evolutionary diversification dynamics of North American grapes across different biomes.

Valcárcel, V., M. Coca de la Iglesia, A. Gallego, **J. Wen**, and N.G. Medina. A pipeline to include the species climatic heterogeneity and the complexity of the world's climate in ancestral reconstructions.

Wen, J., A. Talavera, Z.Y. Ma, G. Johnson, S.M. Ickert-Bond, E.A. Zimmer, and Z.L. Nie. Using phylogenetic relationships and species delimitations of North American *Vitis* to inform crop breeding and conservation action.

Wen, J., A. Talavera, Z. Ma, L. Lu, R. Hodel, L. Zhao, G. Johnson, V. Valcárcel, R. Barrett, E. Zimmer, Z. Nie. Exploring the timing and mode of evolution of Asian and Australasian biogeographic exchanges in a framework of global biogeography.

Wurdack, K.J., O.L.M. da Silva, R. Riina, I. Cordeiro, L.J. Gillespie, W.M. Cardinal-McTeague, F. Fabriani, O. Maurin, S. Zmarzty, A. Zuntini, F. Forest, and W. Baker. New insights in the evolutionary relationships of Euphorbiaceae: Implications for classification and understanding character evolution.

Contributed Posters

Alonso, A., S. Bustamante, X. Tang, R. Ghergheluca, D. Monjas, C. Ornos, E. Moreno, M. Leo Montes, E. Cullen, **A.J. Coello**, V. Valcárcel, N.G. Medina, B.J. Glover, and M. Fernández-Mazuecos. Floral key innovation or environmental isolation? Drivers of speciation in a pair of Mediterranean sister species of *Linaria*.

Andriamanohera, M.A., B. Loeuille, H. Antonio-Domingues, A.R.G. Simões, I.



Post-doctoral fellow Alberto Coello gives a presentation on the phylogenetic diversity and endemism of the Iberian angiosperm flora at the XX International Botanical Congress in Madrid. (photo by Alicia Talavera)

Larridon, and **M.R. Gastel**. A preliminary examination of diversity and evolution in an enigmatic genus of woody plants – *Gymnanthemum* Cass. (Asteraceae, Veroniceae).

Coello, A.J., M. Fernández-Mazuecos, R.H. Heleno, and P. Vargas. PAICE, an innovative tool to estimate inter-island colonization events accounting for sampling bias.

Coello, A.J., G. Johnson, and J. Wen. Unveiling the evolutionary and pantropical biogeographic history of *Cissus*, the largest genus of the grape family Vitaceae.

de Almeida, R.F., M. Alves, J. Bringle Jr., C. van den Verg, **M.R. Gastel**, and N. Roque. Out-of-the-Andes: molecular phylogenetics and historical biogeography of Ecliptinae (Heliantheae).

Duan, L., H.F. Chen, A.J. Harris, and **J. Wen**. Taxonomic and spatiotemporal evolutionary studies on liquorice (Papilionoideae, Glycyrrhizeae) based on genomic data.

Gastel, M.R., R. Mims, P. Malcolm, C. Ely, R. Toppila, E. Thomas, D. Dotson, and A. Meyer. Building bridges and growing genomes: an awards program to support international collections and genomics infrastructure.

Ickert-Bond, S.M., **A. Talavera, G. Johnson, Z. Nie, and J. Wen.** Resolving the

Vitis arizonica complex and the Occidentales group of *Vitis* in North America.

Khadka, B., M.V. Dantas-Queiroz, J. Leong-Škorničková, A.D. Poulsen, **W.J. Kress**, O. Šída, E. Závěská, and T. Fér. Genome size evolution in the tropical ginger genus *Curcuma* L.

Krupnick, G., M. Carlsen-Krause, T. Fér, and W.J. Kress. Phylogenomics, a new classification, and a conservation assessment of the tropical genus *Heliconia* (Zingiberales: Heliconiaceae).

Martén-Rodríguez, S., M.H. de Santiago-Hernández, L. Clemente-Martínez, **G. Krupnick**, O. Taylor, M.E. Lopezaraiza-Mikel, E.E. Paramo-Ortiz, G. Huerta-Ramos, E.M. Senties-Aguilar, S. Díaz-Infante, A.A. Jaimes, S. Novais, E.J. Cristobal-Pérez, J. Cortés-Flores, F.J. Balvino-Olvera, K.D. Pérez-Arroyo, O. Delgado-Carrillo, J. Lobo-Segura, I. Ruiz-Mercado, M.J. Aguilar-Aguilar, R. Sáyo-Lorenzana, Y. Herrerías-Diego, and M. Quesada. A global synthesis of climate change effects on plant reproductive traits and plant-pollinator interactions.

Mendieta-Leiva, G., F.N. Ramos, J.P.C. Elias, G. Zotz, M. Acuña-Tarazona, F.S. Alvim, D.E.F. Barbosa, G.A. Basílio, S.P. Batke, A.M. Benavides, C.T. Blum, C.R. Boelter, P.H.S. Brancalion, M.J. Carmona, L.P. Carvalho, E. de la Rosa-Manzano, H.J.R. Einzmann, M. Fernández, S.G. Fur-

tado, A.L. de Gasper, V. Guzmán-Jacob, P. Hietz, M.V. Irupe, D.A. Jiménez-López, M. Kessler, H. Kreft, T. Krömer, G.M.O. Machado, N. Martínez-Meléndez, P.L.S.S. Martins, R. de Macêdo Mello, A.F. Mendes, L. Menini Neto, S.R. Mortara, C. Nardy, R. de Paula Oliveira, A.C.A. Pereira, L. Pillaca, A.C. Quaresma, C.R. Quiel, E.S. Medina, A. Taylor, M.S. Vega, M.S. Werneck, F.A. Werner, J.H.D. Wolf, C.E. Zartman, **D. Zuleta**, and B. Jiménez-Alfaro. Drivers of vascular epiphyte assemblages across the Neotropics.

Molina-Bustamante, M., J.G. de Aledo, D. Martínez-Atienza, I. Ramos, A. Alonso, C. Ben-Saadi, J.A. Calleja, **A.J. Coello**, R. Díaz, B. Estébanez Pérez, M. Fernández-Mazuecos, A. Gallego-Narbón, N.G. Medina, M. Leo Montes, L. Matas-Granados, A. Otero, and J. Mateo-Martín. Colección Viva UAM - A living collection to teach Botany.

Nicolao, R., **M.R. Gastel**, C.M. Castro, and G. Heiden. Exploring morphological variation in three related species of *Solanum* sect. *Petota* ser. *Commersoniana* and ser. *Tuberosa*.

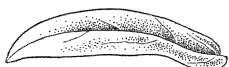
Ramirez-Castillo, R., **A.L. Grusz**, C. Palma-Rojas, C. Araya-Jaime, P. Jara -Seguel, H.A. Benítez, and A. Loayza. Unravelling the diploid-tetraploid complex in *Cheilanthes mollis*, a desert coastal inhabitant from Chile.

Silva, O.L.M., **K.J. Wurdack**, R. Riina, I. Cordeiro, F. Fabriani, O. Maurin, S. Zmarzty, A. Zuntini, F. Forest, and W. Baker. Relationships among the Euphorbiaceae illuminated by highthroughput sequencing data: first steps towards a new classification.

Xu, C., Z.T. Jin, H. Wang, S.Y. Xie, X.H. Lin, **R.G.J. Hodel**, Y. Zhang, D.K. Ma, B. Liu, G.N. Liu, S.H. Jin, L. Zhao, J. Wu, C. Ren, D.Y. Hong, and B.B. Liu. Exploring phylogenetic backbone and deep reticulation of a non-model plant lineage using multi-source genomic data.

Workshops

Pteridophyte Phylogeny Group II (PPG II) workshop organized by Joel Nitta (former Smithsonian Buck Fellow) and **Eric Schuettpelz**.



Smithsonian botanists and their colleagues at the XX International Botanical Congress in Madrid. Top image (left to right): Eric Schuettpelz, Rob Soreng, Ken Wurdack, Larry Dorr, Paul Peterson, John Wiersema. Bottom image (left to right): Alicia Talavera, unknown (affiliation), Jun Wen, Rose Gullledge, Vinita Gowda (Indian Institute of Science), Gary Krupnick. (photographers unknown)

Museum specialists meet in Okinawa at the 39th annual meeting and SPNHC-TDWG joint conference

By Carol Kelloff, Meghann Toner, and Erika Gardner

This year the Society for the Preservation of Natural History Collections (SPNHC) and Biodiversity Information Standards (TDWG) held a joint conference in Okinawa, Japan, from September 2-6, 2024. The theme was “Enhancing Local Capacity, Elevating Global Standards.” Conducted as a hybrid meeting, the SPNHC-TDWG 2024 included papers and symposia on topics of “Back to Basics” sharing peer-to-peer experiences of the day-to-day curatorial work methodologies often learned through practical experiences. Other presentations focused on how we can elevate the global standards of collections care best practices and how digital technology and standards are becoming an increasingly critical component of natural history collections. Lightning talks, limited to 5 minutes, focused on one specimen in the collection that has a fascinating story to tell. Posters, workshops and demonstrations also occurred throughout the week.

Keynote speakers at the conference were Sara Beery, Assistant Professor of AI and Decision Making, Massachusetts Institute of Technology, and Tom Strang, Conservationist. Beery talked about the challenges and opportunities at the inter-

section of AI and biodiversity. Strang told how a chance meeting began a 23-year collaboration with Japanese colleagues to transition away from methyl bromide (MeBr) fumigation and the applicability of alternatives to the protection of cultural property.

An iNaturalist bioblitz ran during the conference for both in-person attendees in Okinawa and those attending remotely. During the conference, 4,738 images were uploaded, resulting in the upload of 1,071 species of both plants and animals. The Oriental turtle-dove, *Streptopelia orientalis*, ranked the most frequent upload.

NMNH Botany staff that attended were **Erika Gardner**, **Carol Kelloff** (SPNHC Archivist, Council Member, and a member of TDWG), and **Meghann Toner** (SPNHC Council Member, a Member-at-Large, and co-organizer of this year’s meeting). Toner presented a paper entitled, “The question is, to destructive sample or not destructive sample botanical specimens.” Her talk outlined how the U.S. National Herbarium is dealing with increased requests for destructive sampling of herbarium specimens. As collections are digitized and data is available to the public, this topic has raised awareness among other institutions that may discover that their collec-

tions may increase the frequency and size of destructive sampling requests. All three staff members also participated in a workshop focusing on the challenges and solutions facing modern herbaria.

The conference concluded with comments from the Okinawa team about our efforts towards sustainable conference practices, relaying results of the Bioblitz, giving out prizes, and providing thanks to our hard-working organizers. The SPNHC-TDWG 2024 and organizers worked towards reduced waste during the conference which included bringing one’s own cup to the coffee breaks, having electronic posters, and vendors bringing some material for display but using QR codes to disseminate information. The committee on Okinawan Sustainability Guidelines (MICE) graded SPNHC-TDWG 2024 on its code of conduct, waste reduction, events citizen participation, and selection of venue and hotels. SPNHC-TDWG 2024 received a high rating of 88.5% that will be used as a standard to gauge all future events held in Okinawa.

Plans are underway for the 40th annual meeting of the Society for the Preservation of Natural History Collections (SPNHC) to take place in Lawrence, Kansas, in early June 2025.



NMNH staff participate in an herbarium discussion group workshop hosted by Kew at the SPNHC meeting in Okinawa, Japan. (photo by Erika Gardner)

Scientists unravel transition of survival strategies in grape family

- Adapted from *Chinese Academy of Sciences*

In a study published in *Nature Plants*, scientists have identified Eocene, Oligocene, and Miocene boundaries as turning points for the transition of survival strategies in the grape family, Vitaceae.

Understanding the origin and dynamics of biodiversity is a fundamental question in the context of global climate change. Faced with environmental fluctuations, plants can either “move” to seek their suitable habitats elsewhere or “evolve” to adapt to the changed environment. Although the transition between “move” and “evolve” has profound implications for the survival and adaptation of organisms, it remains hotly debated whether alternative strategies may dominate under different environmental conditions.

The globally distributed Vitaceae has occupied a wide variety of contrasting niches, including rainforests, savannas, limestone outcrops and even deserts, making it an excellent model to study the transitions of plant survival strategies on a global scale.

Chen Zhidian's research team from the Institute of Botany of the Chinese Academy of Sciences (IBCAS) and their international collaborators, including **Jun Wen** from the Smithsonian's National Museum of Natural History, investigated the transition between “move” and “evolve” strategies, and demonstrated their adaptive significance involving niche opportunity and trait innovation throughout the evolutionary history of Vitaceae.

The researchers constructed a robust phylogeny of Vitaceae based on a worldwide sampling of 495 species from 17 genera, covering ~52% of Vitaceae species. By integrating diversification analyses, ancestral distributions, niche and trait reconstructions, and palaeobotanic data, they inferred the biogeographic diversification patterns and adaptive evolution of Vitaceae under climatic changes.

Vitaceae probably originated in Asia in the late Cretaceous (~72.43 million years ago (Ma)) and spatially diversified to all major continents in the Paleogene. Four genera of Vitaceae (*Ampelocissus*, *Cyphostemma*, *Vitis*, and *Tetrastigma*) have ex-

perienced a significant increase in diversification rate since the Oligocene, coinciding with their niche shifts and the emergence of adaptive traits.

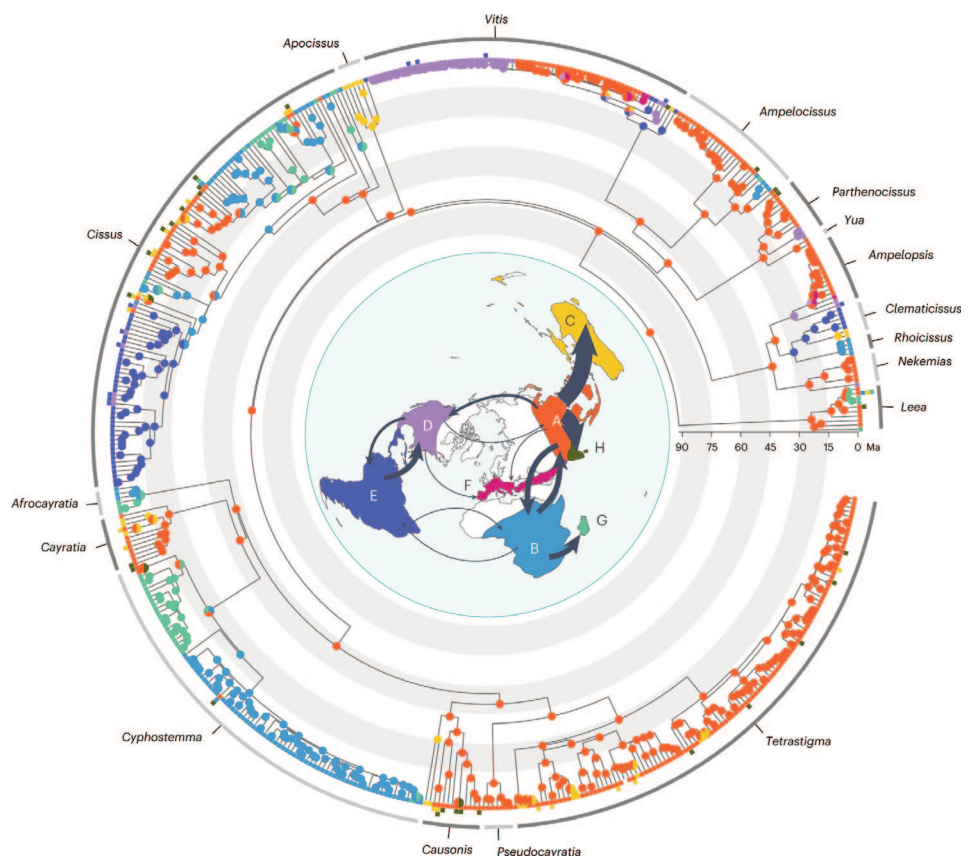
The researchers further identified the “move” strategy as dominant during the Eocene and Miocene, coinciding with the high global temperatures of both periods, while the “evolve” strategy has been the dominant strategy since the last glacial period at 3.3 Ma, when several new habitats emerged in both hemispheres.

This study highlights the importance of niche shifts in recent timeframes and suggests that hypotheses based on niche con-

servatism should be used with caution as an established assumption or be explicitly tested against comparable alternative hypotheses.

The results of this study advance our understanding of the origins and maintenance of biodiversity and provide insights into how plants may respond to a future changing world.

This work was supported by the National Natural Science Foundation of China, the National Key Research Development Program of China, and the Youth Innovation Promotion Association of CAS.



Biogeographic history and global dispersal routes of Vitaceae. The pie charts on the nodes indicate the inferred ancestral areas of the highest probabilities. Arrows on the map indicate dispersal events between areas and the line thickness is proportional to the number of dispersal events. The color scheme of the nodes and tip states is consistent with the regions on the map. A, Asia; B, continental Africa; C, Australasia; D, North America; E, Central and South America; F, Europe–Central Asia; G, Madagascar; H, Indian subcontinent. (published in [You et al. 2024](#))



New taxa recently described by Smithsonian botanists

Over the past few months, Smithsonian botanists have discovered, described, and published 11 new plant species, a new plant genus, and established two new plant tribes. These taxa are found in South America, Africa, Asia, and the Pacific, and they represent unusual and unique additions to our understanding of the world's flora. Some are threatened with extinction.

In [Carvalho-Sobrinho et al. \(2024\)](#), **Laurence Dorr** and colleagues describe a new Brazilian tree species, *Eriotheca paganuccii* (Bombacoideae, Malvaceae). This endangered species is endemic to montane wet forests near granitic-gneissic rock outcrops on summits of mountains in only three different locations in the Atlantic Forest of Bahia.

Dorr also joins colleagues in describing a new species, *Ouratea chepelii* (Ochnaceae), from the Andean mountains of Venezuela ([Niño et al. 2023](#)). The new species is known only from the northern slope of Guaramacal National Park and the park's buffer zone at 1800–2000m.

Ken Wurdack and colleagues describe three new species of *Plukenetia* (Euphorbiaceae) from Madagascar ([Gillespie et al., 2024](#)). The three species, *Plukenetia antilahanensis*, *P. antilahimena*, and *P. randrianaivoi*, are unusual based on morphology, pollen, and molecular data. Based on their results, the authors suggest that the three new species along with *P. ankaranensis* form a subclade, sister to the other two Malagasy species, *P. decidua* and *P. madagascariensis*.

In [Lorence et al. \(2024\)](#), **Marc Appelhans** and **Warren Wagner** join Dave Lorence (National Tropical Botanical Garden) in describing a new shrub species, *Myrsine cirrhosa* (Primulaceae), from the Hawaiian island of Kaua'i. This species is restricted to the remote central windward region of Kaua'i in open bogs and along open windy ridges. With less than 50 individuals and threatened by invasive, non-native animals (pigs, rats, slugs, and goats) and non-native plant competitors, the authors assess this new taxon as Critically Endangered.

While studying specimens and preparing the treatment of *Mapania* (Cyper-

aceae) for Flora of the Guianas, **Mark Strong** discovered material of four undescribed species ([Strong et al., 2024](#)). All four South American taxa, *M. nigroventralis*, *M. pakaraimensis*, *M. waiwai*, and *M. wokomungensis*, are endemic to tepui ecosystems in Guyana and appear to be threatened with extinction, with each receiving a preliminary conservation assessment of Critically Endangered, except *M. pakaraimensis*, which is assessed as Endan-

gered. Strong also named a species, *Rhynchospora hollowellii*, in honor of Tom Hollowell (1954–2018), a Smithsonian staff member who managed the Biodiversity of the Guianas and National Museum of Natural History's taxonomic databases. The species occurs in Venezuela and western Guyana.

Using molecular phylogenetics, **Morgan Gostel**, **Carol Kelloff**, **Raymund Chan**, the late **Vick Funk**, and colleagues



Eriotheca paganuccii was recently described as a new species by Jefferson Carvalho-Sobrinho, Aline da Mota, and Laurence Dorr. A) crown of *E. paganuccii* individuals in the canopy; B) detail of leaves at the top of the tree canopy; C) bark; D) leaves with less exposure to the sun; E) flower; F) seeds relative to a fruit valve and scanty kapok. (published in [PhytoKeys](#))

(Gostel et al., 2024) recognize a new tribe, Distephaneae (Asteraceae), which is found in West Africa, throughout tropical and subtropical Africa and Madagascar, Mauritius, Socotra, and the Yunnan province in China. This new tribe comprises 41 species of shrubs and small trees in the genus *Distephanus* that are easily distinguished from sister tribes, Moquinieae and Vernonieae, based on the presence of florets with yel-

low corollas and trinervate leaves.

In Tu et al. (2024), Jun Wen and colleagues use molecular phylogenetics to recognize a new monotypic genus, *Clavistigma*, and a new tribe, Clavistigmateae, to accommodate the morphologically distinctive species *Wendlandia pendula*. The isolated phylogenetic position of this species was not a surprise to the authors because it is highly distinctive from all

other *Wendlandia* species. The newly described species, *Clavistigma pendula*, is a shrub native to tropical and subtropical forests and thickets of Yunnan of China, Bhutan, India, Nepal, and Thailand.

The full citations of all above publications can be found listed in the Publications section of this issue of *The Plant Press* on page 15.



Myrsine cirrhosa was recently described as a new species by David Lorence, Ken Wood, Marc Appelhans, and Warren Wagner. A) habit showing leaves with characteristic undulate margins and cirrhose apex; B) twig with leaves and flowers; C) open exposed wind-swept summit ridges of Wai'ale'ale, Kaua'i, representing the habitat for *Myrsine cirrhosa*. (photos by K.R. Wood, published in *PhytoKeys*)

Congressional ‘Night at the Museum’

Smithsonian Congressional Night was held at the National Museum of Natural History (NMNH) on the evening of July 24, 2024. The event was attended by approximately 1,800 guests, including Members of Congress, Congressional staff, representatives of Nissan North America, senior Smithsonian and NMNH staff, and guests’ families. The event enabled informal interactions between the museum’s scientific expert community, Members of Congress, Congressional staff, and their families. Guests had the opportunity to meet the museum’s research staff, engage in educational activities, and visit the museum’s exhibit halls. NMNH previously hosted the event in 2022, [2019](#), [2013](#), and [1998](#).

The success of the Smithsonian Congressional Night was in part due to broad participation from across the museum’s research departments. NMNH had over 40 science volunteers to show off the museum’s incredible collections. The Department of Botany was represented by three scientific carts.

A cart hosted by **Alice Tangerini** and **Warren Wagner** featured illustrations of two new species of the Hawaiian genus *Schiedea*, a genus that has been studied by Wagner and colleagues for many years. The illustrations were selected to demonstrate the unique and significant contribution of scientific illustration to understanding the characteristic of a species. One of them, *S. haakoaensis*, was discovered in a remote location, but was not in flower. When the field botanists returned months later to hopefully find the plant in flower and fruit, it was instead dead. The field botanists collected soil where it was growing, and in the greenhouse they managed to grow two seedlings. Using rulers placed next to parts of the plant, they took photos and collected small parts of the plant which were sent to the Smithsonian. With the photos and plant parts, Tangerini managed to reconstruct a complete illustration of the plant and its unique features that was colored in a final step with the computer matching the colors of the plant parts. The second new species of *Schiedea* was discovered by

a field team using a drone to image sheer cliffs on Hawaii’s oldest island, Kaua’i. The drone used a uniquely designed collecting arm to make collections. Photos taken by the drone camera and the small collections were used by Tangerini to reconstruct all features of the new cliff species. The illustration, photos, and plant herbarium specimens on the cart were used to show the guests how the illustration was created for the scientific publication of the new species.

The second Botany cart was hosted by **Greg Stull** and highlighted an assortment of fruits and seeds that were confiscated from cargo and passenger luggage at U.S. Ports of Entry and sent to USDA National Botanists for identification. Stull spoke to guests about the purpose of the USDA’s National Identification Services (NIS) Botany Lab, which is now located in the NMNH’s Department of Botany. He

stressed the importance of Smithsonian Botany collections for performing urgent and routine plant identifications, which is the core responsibility of the NIS Botanists.

A third Botany cart, hosted by **Ian Medeiros**, featured a selection of lichen specimens from the U.S. National Herbarium. Medeiros spoke with guests about what lichens are and how they are able to thrive in water-stressed environments from deserts to downtown D.C. He also discussed how the collections resources of NMNH facilitate his current research on the lichen-forming genus *Xanthoparmelia*. A side-by-side comparison of wet and dry specimens of *Cladonia*, which the guests were free to touch, was popular with children and adults alike. The specimens served as a demonstration of the ability of lichens to rehydrate after desiccation.



The Department of Botany was represented by Greg Stull (above), Warren Wagner and Alice Tangerini (upper right), and Ian Medeiros (right) at the Smithsonian Congressional Night, held at the National Museum of Natural History on the evening of July 24, 2024. (photos provided by W. Wagner)

U.S. National Herbarium
By the Numbers
❖ *Collections Edition* ❖



16,042

Specimens digitized/imaged in FY24

6,109

New specimens accessioned into the
collection in FY24

6,027

Specimens mounted in FY24

1,140

Specimens loaned out in FY24



Volunteers in the Department of Botany carefully mount plant specimens to herbarium sheets. (top photo by Erika Gardner, bottom photographer unknown)

NEW FACES

Bertrand Black is a Ph.D. candidate in Plant Biology at the University of Vermont. He joined Botany as a predoctoral fellow in August 2024, working under the mentorship of **Eric Schuettpelz**. His dissertation focuses on the phylogenomics, biogeography, and systematics of American lady ferns (*Athyrium filix-femina* complex), with an emphasis on understanding their evolutionary relationships, species diversity, and historical biogeography. While at the Smithsonian, he will continue his work integrating next-generation sequence data and the collection of preserved specimens housed in the herbarium to document unrecognized lady fern diversity across the Americas. At the University of Vermont, he also teaches field courses on plant identification and how to prepare museum-quality plant collections.

Angélica Gallego Narbón started a Peter Buck fellowship in October 2024 in the NMNH Department of Botany under the supervision of **Jun Wen**. Her postdoctoral research examines the influence of climate and biogeography in the evolution of several Araliaceae lineages, with a special focus in the disjunct Asian-Neotropical genus *Dendropanax* and the ivy genus *Hedera*. She recently completed her Ph.D. focused on the systematics and evolution of the biggest clade of the plant family Araliaceae (Asian Palmate group) at Universidad Autónoma de Madrid in Spain. Her dissertation investigated the evolutionary relationships of the genera within this clade, as well as the evolution, biogeography, and ecology of ivies in their natural habits in western Europe. During this period, she had the opportunity to work at the Smithsonian with Wen supported by the Smithsonian Institution Fellowship Program (SIFP). Her research interests include studying the plant family Araliaceae from an integrative perspective, combining phylogenomics, biogeography, diversification, climate and functional trait analyses. Her research can be followed on her social media accounts (X: @agallegonarbon, ResearchGate: <https://www.researchgate.net/profile/Angelica-Gallego-Narbon>).

Yali Li is a visiting graduate student from the South China Botanical Garden, Chinese Academy of Sciences. A Ph.D.

student in Plant Biology, her thesis focuses on the conservation genomics of *Firmiana danxiaensis* (Malvaceae), a critically endangered species currently found in only six locations in Guangdong Province and Fujian Province, China. The species is naturally distributed across Danxia and Karst landforms. Under the supervision of **Jun Wen**, she is working to better elucidate the endangered mechanisms of *F. danxiaensis* as well as its adaptation to specialized habitats. She has additional interests in biogeography, dispersal, and evolution of the *Firmiana* genus.

Ting Wang, a visiting postdoctoral fellow from South China Botanical Garden, Chinese Academy of Sciences, joined Botany in September 2024, working under the supervision of **Jun Wen** and **Eric Schuettpelz**. Her project focuses on the phylogenetic and biogeographical origins of *Angiopteris* (Marattiaceae), a genus that is widely distributed from Madagascar to the Pacific Islands. At the Smithsonian, she plans to supplement the DNA from the Pacific Island samples with the aim of gaining a more comprehensive understanding of the evolutionary history of *Angiopteris* across time and space.



New faces in the Department of Botany (clockwise from top left): Bertrand Black, Angélica Gallego Narbón, Ting Wang, and Yali Li. (photographers unknown)

TRAVEL

Alberto Coello traveled to Madrid, Spain (7/20–7/28) to present a talk and two posters at the XX International Botanical Congress.

Stuart Davies traveled to Bangkok, Thailand (7/5–7/14) to attend a regional ForestGEO analytical workshop; and to New York City, New York (9/22–9/24) to attend Climate Week NYC conferences and meetings.

Laurence Dorr traveled to Madrid, Spain (7/13–7/28) to attend the XX International Botanical Congress and the Nomenclature Section of the Congress.

Erika Gardner traveled to Okinawa, Japan (8/30–9/10) to attend the SPNHC-TDWG joint conference.

Rose Gulledge traveled to Madrid, Spain (7/14–7/27) to attend the XX International Botanical Congress and the Nomenclature Section of the Congress.

Richie Hodel traveled to Madrid, Spain (7/20–7/28) to present a talk at the XX International Botanical Congress.

Carol Kelloff traveled to Okinawa, Japan (8/31–9/7) to attend the SPNHC-TDWG joint conference.

David Kenfack traveled to Nairobi, Kenya (7/7–7/9) to attend the AfriGEO Symposium; and to Yaounde, Cameroon (9/29–10/10) to attend a regional ForestGEO analytical workshop.

Gary Krupnick traveled to Madrid, Spain (7/20–7/29) to present a poster at the XX International Botanical Congress.

Eugenia Mas traveled to Kuala Lumpur, Malaysia (8/31–10/15) to conduct field work.

Ian Medeiros traveled to New York City, New York (8/16) to study material of southern African lichens at the New York Botanical Garden; and to Durham, North Carolina (9/20–9/22) to collaborate with other lichenologists at Duke University.

Jose Medina traveled to Berkeley, California (9/9–9/13) to attend a Next Generation Ecosystem Experiment-Tropics (NGEE-Tropics) meeting and an Alliance for Tropical Forest Science (ATFS) FATES tutorial; and to Yaounde, Cameroon (9/29–10/10) to attend a regional ForestGEO analytical workshop.

Paul Peterson traveled to Madrid, Spain (7/13–7/23) to attend the XX International Botanical Congress and the No-

menclature Section of the Congress.

Vijay Raman traveled to Madrid, Spain (7/20–7/27) to attend the XX International Botanical Congress.

Eric Schuettelpelz traveled to Madrid, Spain (7/13–7/25) to attend the XX International Botanical Congress and the Nomenclature Section of the Congress.

Robert Soreng traveled to Madrid, Spain (7/13–7/28) to present a talk at the XX International Botanical Congress and to attend the Nomenclature Section of the Congress.

Alicia Talavera traveled to Madrid, Spain (7/20–7/27) to present a talk at the XX International Botanical Congress.

Alice Tangerini traveled to Upperville, Virginia (7/16–7/17) to present a lecture on botanical illustration at Oak Spring

Garden Foundation.

Meghann Toner traveled to Okinawa, Japan (8/30–9/10) to present a talk at the SPNHC-TDWG joint conference.

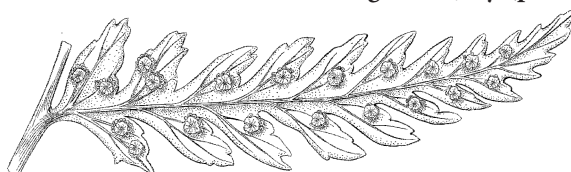
Jun Wen traveled to Madrid, Spain (7/20–7/28) to present two talks at the XX International Botanical Congress; and throughout Mexico (8/3–8/31) on a field expedition collecting of Vitaceae and food and drug plants.

John Wiersema traveled to Madrid, Spain (7/13–7/25) to attend the XX International Botanical Congress and the Nomenclature Section of the Congress.

Kenneth Wurdack traveled to Madrid, Spain (7/13–7/28) to present a talk at the XX International Botanical Congress and to attend the Nomenclature Section of the Congress.



Jun Wen, Gary Krupnick, Rose Gulledge, and Alicia Talavera (left to right) explore Madrid during the XX International Botanical Congress in July. (photo by Vijay Raman)



STAFF ACTIVITIES

On July 16, 2024, **Alice Tangerini** traveled to Oak Spring Garden Foundation (OSGF) in Upperville, Virginia to teach a class on Botanical Illustration and present a lecture entitled, “Botanical Illustration at the Museum.”

Tangerini was asked by Danielle Eady, OSGF Director of Art and Residential Programs, to lead a class demonstration on botanical illustration in pen and ink techniques to students from the Rare Book School of the University of Virginia. Tangerini’s class this year was modeled after her previous year’s class for the Rare Book School, and it was also part of the curriculum titled, *Six Hundred Years of Botanical Illustration*, led by Roger Gaskell, UVA Faculty member, and Peter Crane, OSGF President.

Tangerini’s lecture and techniques focused on the last 50 years of botanical illustration. She concentrated on the techniques used in pen and ink illustration but also showed examples of digital artwork and explained the transition from the

traditional to digital techniques over the last 24 years.

Gardeners at OSGF provided living material including varieties of rudbeckias and made available prints of the flower heads to expedite the drawing process. Using the tracing acetate and drafting film

provided, the class completed their finished pieces in pen and ink of the *Rudbeckia* heads and leaves. The class ended with Peter Crane giving an early evening tour of the greenhouses and conservation gardens followed by dinner at the former “schoolhouse”.



Alice Tangerini (top right corner of the table) instructs a class from the University of Virginia on botanical illustration. (image courtesy of the Oak Spring Garden Foundation)

VISITORS

Asia Hightower, Michigan State University; Herbarium research (6/3-9/30).

Maria Fernanda Valencia, Universidad Nacional de Colombia, Colombia; Herbarium research (7/10-8/8).

Juan Lopez-Bautista and **Eric Wiggins**, The University of Alabama; Algae collection and herbarium tour (7/12).

Guy Nesom, Academy of Natural Sciences; Asteraceae (7/16-7/17).

Giancarlo Gonzalez-Feliu, University of Puerto Rico; *Ilex* (Aquifoliaceae) (7/22-7/26).

Sheetal Vaidya Pradhan, Tribhuvan University, Nepal; *Anaphalis* (Asteraceae) (7/22-7/25).

Julian Aguirre-Santoro, Missouri Botanical Garden; Bromeliaceae (7/29-8/2).

Diego Silva, Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Brazil; Tribe Marcetieae (Melastomataceae) (8/5-8/9).

Ann Chen, The New School Parsons School of Design, and **Yutong Lin**, Canadian Centre for Architecture; Botanical art (8/27).

Elizabeth Collins, George Mason University; Herbarium research (8/27-8/30).

Matthew Sewell, US Department of Agriculture; Herbarium research (9/3-9/6).

Yali Li, South China Botanical Garden; *Firmiana* (Malvaceae) (9/10/24-9/3/25).

Ting Wang, South China Botanical Garden; *Angiopteris* (Marattiaceae) (9/10/24-9/3/25).

Lynn Gillespie, Canadian Museum of Nature; *Omphalea*, *Cnesmone*, *Megistostigma* (Euphorbiaceae) (9/16-9/20).

Geoffrey Levin, Canadian Museum of Nature; *Drypetes* (Putranjivaceae, formerly Euphorbiaceae) (9/16-9/20).

Elena Patterson and **Thomas Patterson**, The University of Texas at Austin; *Pinus*

(Pinaceae) (9/16-9/17).

Seah Wei Wei, Naturalis Biodiversity Centre, Netherlands; Calophyllaceae (9/16-9/20).

Joao Monzoli, São Paulo State University, Brazil; *Doliodarpus* (Dilleniaceae) (9/23-9/27).

Rafal Gutaker, Royal Botanical Garden, Kew, United Kingdom; *Oryza* (Poaceae) (9/25).

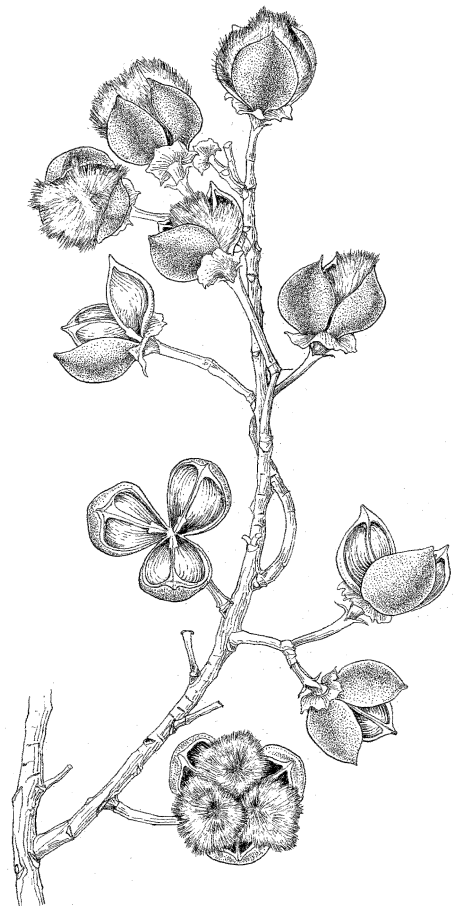
Priscila Lopez, Smithsonian Tropical Research Institute; *Selaginella* (Selaginellaceae) (9/30-10/4).

John Mitchell, New York Botanical Garden, New York, and **Susan Pell**, United States Botanic Garden; Anacardiaceae (9/30-10/4).



PUBLICATIONS

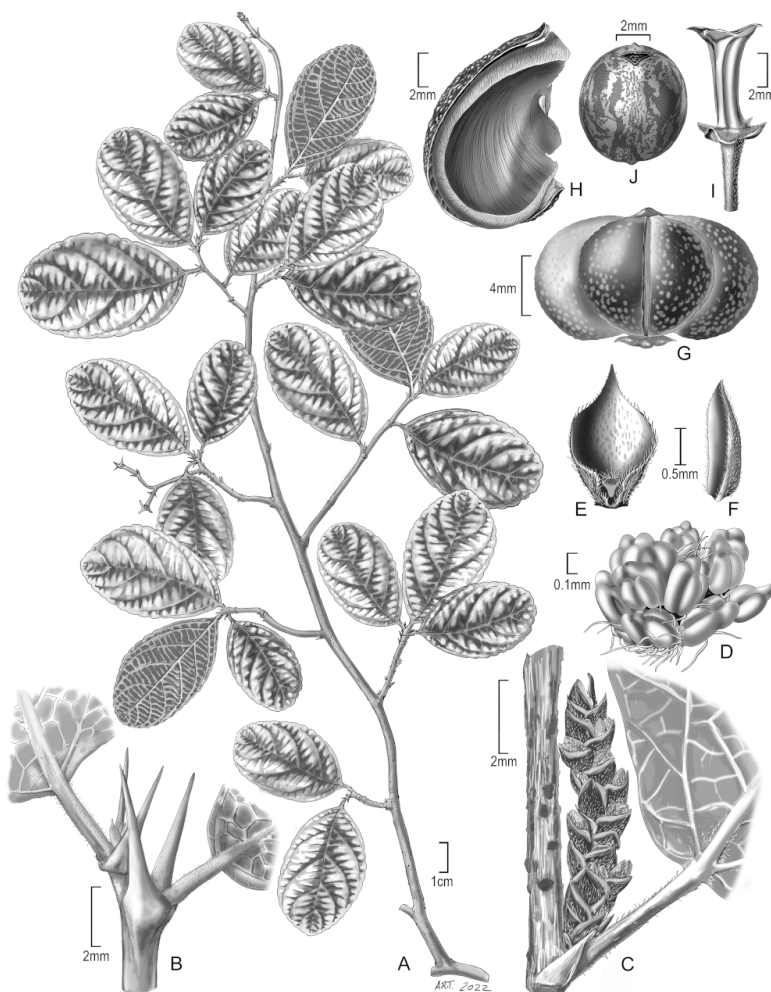
- Ang, L.P., F. Brambach, S. Tomasello, **J. Wen**, and **M.S. Appelhans**. 2024. Hybrid capture resolves the phylogeny of *Tetradium* (Rutaceae) and supports the inclusion of a species from Sulawesi. *J. Syst. Evol.* <https://doi.org/10.1111/jse.13127>
- Carvalho-Sobrinho, J., A.C. da Mota, and **L.J. Dorr**. 2024. *Eriotheca paganuccii* (Bombacoideae, Malvaceae), a new endangered species from montane forests in the Atlantic Forest of Bahia, northeastern Brazil. *PhytoKeys* 243: 215-230. <https://doi.org/10.3897/phytokeys.243.125708>
- Coello, A.J.**, P. Vargas, A. Alameda-Martín, E. Cano, Y. Arjona, and M. Fernández-Mazuecos. 2024. Phylogenetic and phylogeographic evidence for the colonization success of the diplochorous *Astydamia latifolia* across the Canary Islands. *Ecol. Evol.* 14(7): e11624. <https://doi.org/10.1002/ece3.11624>
- De Silva, S., C. Cagliero, **M.R. Gostel**, **G. Johnson**, and J.L. Anderson. 2024. Versatile DNA extraction from diverse plant taxa using ionic liquids and magnetic ionic liquids: a methodological breakthrough for enhanced sample utility. *Plant Methods* 20: 91. <https://doi.org/10.1186/s13007-024-01217-z>
- Gillespie, L.J., W. Cardinal-McTeague, and **K.J. Wurdack**. 2024. Three unusual new species of *Plukenetia* (Euphorbiaceae) from Madagascar: species radiation and convergent evolution in *P.* sect. *Madagascarienses*. *Syst. Bot.* 49(1): 192-208. <https://doi.org/10.1600/036364424X17110456120767>
- Gostel, M.R.**, B. Loeuille, M.H. Santana, **C.L. Kelloff**, **R. Chan**, A.R. Giraldes Simões, I. Larridon, and **V.A. Funk**. 2024. Molecular phylogenetics of *Distephanus* supports the recognition of a new tribe, Distephaneae (Asteraceae). *Bot. J. Linn. Soc.* <https://doi.org/10.1093/botlinnean/boae025>
- Krupnick, G.A.** 2024. Gradations of extinction. *Arnoldia* 81(2): 38-45.
- Liang, Y., R.B. Dikow, X. Su, **J. Wen**, and Z. Ren. 2024. Comparative genomics of the primary endosymbiont *Buchnera aphidicola* in aphid hosts and their coevolutionary relationships. *BMC Biol.* 22: 137. <https://doi.org/10.1186/s12915-024-01934-w>
- Lorence, D.H., K.R. Wood, **M.S. Appelhans**, and **W.L. Wagner**. 2024. *Myrsine cirrhosa* (Primulaceae), a distinctive new shrub species from Kaua'i, Hawaiian Islands. *Phytokeys* 243: 47-61. <https://doi.org/10.3897/phytokeys.243.123694>
- Migacz, I.P., M. Wang, J.A.M. Faoro, S.M. dos Santos, A.S.N. Formagio, C.A.L. Kasuya, J.U. Rehman, W.H. Perera, V.C. Goncalves, D.S. de Almeida Chaves, **V. Raman**, P.V. Farago, I.A. Khan, and J. Manfron. 2024. Bioprospecting and repurposing of leaf biomass to support sustainable biopharmacy: evaluation of seasonal chemical variations and biological activities of six *Eucalyptus* essential oils. *Int. J. Environ. Res.* 18(4): 74. <https://doi.org/10.1007/s41742-024-00628-z>
- Niño, S.M., **L.J. Dorr**, and D.S. Canelón. 2023. *Ouratea chepeli* (Ochnaceae), una nueva especie y aspectos fitogeográficos del género en la región Andina de Venezuela. *Harvard Pap. Bot.* 28(2): 703-709. <https://doi.org/10.3100/hpib.v28iss2.2023.n6>
- Ramirez-Castillo, R., C. Palma-Rojas, P.J. Seguel, **A.L. Grusz**, and C. Araya-Jaime. 2024. Unfurling an improved method for visualizing mitotic chromosomes in ferns. *Appl. Plant Sci.* 12(4): e11588. <https://doi.org/10.1002/aps3.11588>
- Ren, C., L. Wang, Z.L. Nie, M. Tang, **G. Johnson**, H.T. Tan, N.H. Xia, **J. Wen** and Q.E. Yang. 2024. Complex but clear allopolyploid pattern of subtribe Tussilaginatae (Asteraceae: Senecioneae) revealed by robust phylogenomic evidence, with development of a novel homeolog-sorting pipeline. *Syst. Biol.* <https://doi.org/10.1093/sysbio/syae046>
- Strong, M.T.**, K. Camelbeke, P. Goetghebeur, G.C. Tucker, and W. Veys. 2024. New species of *Mapania*, combinations, a new name, and typifications in Cyperaceae for Flora of the Guianas. *Novon* 32: 97-113. <https://doi.org/10.3417/2024875>
- Tu, T., J. Cai, S.G. Razafimandimbison, X. Hu, Q. Xia, H. Yang, S. Gu, T. Huang, Z. Zhao, M. Shi, X. Wang, S. Li, P. Xie, **J. Wen** and D. Zhang. 2024. Biphyly of the genus *Wendlandia* and establishment of a new tribe Clavistigmeae and a new genus *Clavistigma* of Rubiaceae from Asia. *Biol. Divers.* 1(2): 58-74. <https://doi.org/10.1002/bod2.12013>
- Turland, N.J., M. Kempa, S. Knapp, E. Král'ovičová, and **J.H. Wiersema**. 2024. Results of the preliminary guiding vote ("mail vote") on proposals to amend the *International Code of Nomenclature for algae, fungi, and plants* submitted to the XX International Botanical Congress, Madrid 2024. *Taxon* 73(4): 1096-1109. <https://doi.org/10.1002/tax.13233>
- You, Y., J. Yu, Z. Nie, D. Peng, R.L. Barrett, R.N. Rabarijaona, Y. Lai, Y. Zhao, V.C. Dang, Y. Chen, Z. Chen, **J. Wen**, and L. Lu. 2024. Transition of survival strategies under global climate shifts in the grape family. *Nat. Plants* 10(7): 1100-1111. <https://doi.org/10.1038/s41477-024-01726-8>
- Yuan, J.C., A. Liu, A. Takano, M. Maki, **R.G.J. Hodel**, Y.P. Chen, and C.L. Xiang. 2024. Plastid phylogenomics with broad taxon sampling provides insights into the generic delimitation of Paraphlomideae (Lamiaceae). *Taxon* 73(4): 1016-1029. <https://doi.org/10.1002/tax.13222>



ART BY ALICE TANGERINI

Bahiana occidentalis K.Wurdack

Bahiana occidentalis K.Wurdack (PhytoKeys 219: 121-144; 2023) was first collected 40 years before it was described based on an accumulation of 35 collections from the seasonally dry tropical forests of northern Peru. Since none of those collections was flowering – sterile, young buds, or fruits – it had lain in herbaria as an unidentified member of Euphorbiaceae that had stymied years of euphorb-specialist scrutiny. The keys to its recognition came with genetic data and the shared morphological feature of unusual spiny stipules that linked it to *Bahiana*, a genus that had just been described in 2022 based on second species in eastern Brazil. The illustration by Alice Tangerini began as pen and ink drawings that were digitized and then shaded. This taxon is being included in Kew's PAFTOL (Plant and Fungal Trees of Life) project, about which Ken Wurdack gave an overview at the XX International Botanical Congress (IBC) of its recent findings for Euphorbiaceae.



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